

RECEIVED  
CENTRAL FAX CENTER  
MAY 25 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:	Boudouris et al
Application No.:	09/990109
Filed:	November 21, 2001
For:	Magnetic Substrates, Composition and Method for Making the Same
Group Art Unit:	1733

Mail Stop \_\_\_\_\_  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Docket No.: M112.2-10064-US01

DECLARATION UNDER 37 C.F.R. §1.132  
SUPPLEMENTAL BOUDOURIS DECLARATION

I, Randall Boudouris, coinventor of the above referenced patent application and of the subject matter described and claimed therein, attest and say as follows:

1. I have previously provided declarations for this application, dated 5-28-2004 and 9-6-2005. My background was provided in the declaration dated 5-28-2004. I am informed that my previous declaration has a USPTO mailroom date of 6-10-2004. This declaration is submitted to supplement my previous declarations.
2. I have reviewed U.S. Patent No. 6,881,450 to Texier.
3. At col. 3, lines 24-29, the only example provided by the Texier patent regarding how much electromagnetic filler to use is the following:

Advantageously, the amount of electromagnetic filler that is used is the maximum that can be accepted by the binder, for example six units by weight of ferromagnetic powder for two units by weight of binder. For examples 200 grams (g) to 850 g of iron oxide can be deposited per square meter (m<sup>2</sup>) of card, e.g. 800 g/m<sup>2</sup>.

This example reflects an electromagnetic filler loading therefore of 6 units ferromagnetic powder/ 6 units ferromagnetic powder + 2 units binder or 75% electromagnetic filler loading.

4. Attached as Exhibit A is a letter from Greg M. Umana, Product Manager, KJS Associates Div., Magnetic Instrumentation, Inc., 8431 Castlewood Drive, Indianapolis, IN 46250 (an independent testing firm) reporting the results of magnetic strength testing on magnetic samples having 75% ferrite loading and about 86% ferrite loading.

5. The magnetic formulations were prepared as follows:

Formulation 1

75.00% Starbond® HM403 ferrite powder; Hoosier Magnetics, Inc., Ogdensburg, NY  
8.65% Escorene® UL7710 ethylene vinyl acetate copolymer (28% vinyl acetate, 420 melt index, 39,000 cPs viscosity); ExxonMobil Chemical Co., Houston, TX  
11.10% MVO 2528 ethylene vinyl acetate copolymer (27.5% vinyl acetate, 2500 melt index, 7,000 cPs viscosity); ExxonMobil Chemical Co.  
4.93% UL7840C ethylene vinyl acetate copolymer (28% vinyl acetate, 43 melt index, 345,000 cPs viscosity); ExxonMobil Chemical Co.  
0.21% Irganox® 1010 antioxidant; Ciba Specialty Chemicals, Tarrytown, NY  
0.11% Benefos® 1680 antioxidant; Mayzo, Inc., Norcross, GA

Formulation 2

85.95% Starbond® HM403 ferrite powder; Hoosier Magnetics, Inc., Ogdensburg, NY  
4.86% Escorene® UL7710 ethylene vinyl acetate copolymer (28% vinyl acetate, 420 melt index, 39,000 cPs viscosity); ExxonMobil Chemical Co., Houston, TX  
6.24% MVO 2528 ethylene vinyl acetate copolymer (27.5% vinyl acetate, 2500 melt index, 7,000 cPs viscosity); ExxonMobil Chemical Co.  
2.77% UL7840C ethylene vinyl acetate copolymer (28% vinyl acetate, 43 melt index, 345,000 cPs viscosity); ExxonMobil Chemical Co.  
0.12% Irganox® 1010 antioxidant; Ciba Specialty Chemicals, Tarrytown, NY  
0.06% Benefos® 1680 antioxidant; Mayzo, Inc., Norcross, GA  
100%

6. Each formulation was applied to paper having a thickness of 0.0046. The magnetic layer for formulation 1 was 0.0104" (254 microns) thick and the magnetic layer for formulation 2 was 0.0100" (264 microns) thick. Each sample was cut into 4" x 4" sheets.

7. The force required to pull a magnetic sample from a 4" x 4" steel plate at a rate of 0.200"/s was measured using an Imada DPS-1 Force gauge. The peak force in grams was recorded after each measurement. The test was repeated 10 times for each sample.

8. The average force in grams for removing a magnetic sample having 75% ferrite loading from a 4" x 4" steel plate was 94.8 grams.

9. The average force for removing a magnetic sample having 86% ferrite loading from a 4" x 4" steel plate was 218.0 grams.

10. The sample having 86% ferrite loading exhibited an increase in magnetic strength of 123.2 grams, which is about 2.3 times the strength of the sample having a 75% ferrite loading.

11. This is an extraordinarily significant difference in magnetic strength and cannot be expected from the relatively much smaller change in composition percentages. I can see nothing in the Texier patent that even hints that such a result may be achieved under any condition, much less that it could be achieved by such a small difference in composition.

12. The sample having a ferrite loading of about 86% produced a far superior magnetic sheet than the sample having a ferrite loading of 75%. For purposes of attaching a magnet to a refrigerator, and for purposes of holding sheets of paper beneath a magnet, such a difference in magnetic strength is highly significant. The more than doubled magnetic strength can make the difference between commercial success and commercial failure for our application.

13. It is surprising and unexpected that a composition having 86% ferrite produces a magnet that has such a significantly higher magnetic strength of more than two times the magnetic strength of a composition having 75% ferrite.

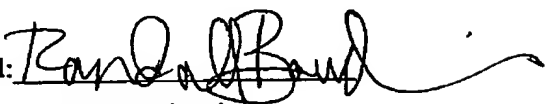
## BEST AVAILABLE COPY

14. Further, in my declaration of September 6, 2005, it was shown that the viscosity of compositions having 80% and 85%, were too high for the Nordson 3960 Multiscan®, the only hot melt applicator disclosed by Texier, which employs a DC gear pump which can only handle a maximum viscosity of 30,000 cPs, and which produces little or no shear thinning forces.

15. Based on the fact that the maximum Texier discloses is 75% ferrite, and the Nordson 3960 Multiscan® cannot handle viscosities of compositions having 80% and 85% ferrite loading, Texier fails to suggest to one of skill in the art, a composition having any more than 75% ferrite under any conditions.

16. All statements made herein of my own knowledge are true; all statements made on the information and belief are believed to be true; and all the foregoing statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment or both, under § 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of this application and any registration resulting therefrom.

Date: 5-23-2006

Signed:   
Randall Boudouris  
CEO  
MagnetNotes, Ltd.

**Exhibit A****mi** magnetic  
instrumentation inc.

May 9, 2006

**Attn: Ray Richards**  
Magnet Notes Ltd.  
8050 Holstein Road  
Toledo, OH 43617

Tel: 419-843-5808

email: rays.richard@sev.org

Ref: P.O. 1-1451, S.O. No. 20060482 Holding Force Measurements on Ferrite Sheet  
Samples

Dear Mr. Richards:

We have completed the holding force measurement tests on the multi-pole ferrite sheet samples that were forwarded to us for testing. The following procedural notes apply to this work:

1. Each sample was recorded in our sample log and are identified as described below:

<i><b>KJS ID</b></i>	<i><b>CUSTOMER ID</b></i>
MS15013	Orrex 75% Ferrite Lot#060319-1 Pallet 1 Run 4/11/06
MS15014	Orrex 86% Ferrite Std Pellets Lot#060301-1 Pallet 219

2. The dimensions of each sample were measured and recorded.
3. Each sample was attached to a non-magnetic rigid 4"x4"x1/8" back plate made of Lexan.
4. An Imada DPS-1 Force gage was used for all testing (SN 17749E), calibration due 4/27/07. The gage was attached to our M9304 field map system table so that the speed of sample movement could be controlled consistently in the z direction.
5. The meter was zeroed with the sample, part holder and all gage hardware attached. Zeroing was repeated prior to each measurement.
6. A 4" x 4" steel plate was located near the home position of the table.
7. Each part was placed on the steel plate. The meter was placed in peak mode. The sample was pulled off the steel plate at a rate of 0.200"/s (800 steps/s @0.00025"/step) in the z direction. The peak force in grams was recorded after each measurement.

Page 1 of 3

8431 Castlewood Drive, Indianapolis, IN 46250 USA  
(317) 842-7500 • Fax (317) 849-7600  
E-Mail: [maginst@maginst.com](mailto:maginst@maginst.com) • [www.maginst.com](http://www.maginst.com)

**mi** magnetic  
instrumentation inc.



8. Steps 5 to 7 were repeated 10 times for each of the test samples.
9. Test results for each sample are summarized in the data table found on page 3.
10. Deliverables include emailed copy of data/report, hard copy of the report/ and return of all test samples.

Thank you for this opportunity to be of service. If you have any questions or comments about the work, please contact me.

Sincerely yours,

KJS Associates Div.  
Magnetic Instrumentation, Inc.

A handwritten signature in black ink, appearing to read "Greg M. Umana".

Greg M. Umana  
KJS Product Mgr.

cc: file

Page 2 of 3

8431 Castlewood Drive, Indianapolis, IN 46250 USA  
(317) 842-7500 • Fax (317) 849-7600  
E-Mail: [maginst@maginst.com](mailto:maginst@maginst.com) • [www.maginst.com](http://www.maginst.com)



SO #: 20060482  
Customer: Magnet Notes  
PO#: 1-1451

KJS ID: MS15013 Customer ID: Orrex 75% Ferrite Lot# 060319-1 Run 4/11/06 Pallet 1				
Peak Force Measurements				
Test	(g)	(oz.)	(g/cm <sup>2</sup> )	(oz/in <sup>2</sup> )
1	93.9	3.31	0.950	0.216
2	97.1	3.43	0.982	0.224
3	95.1	3.36	0.962	0.219
4	92.6	3.27	0.936	0.213
5	91.7	3.24	0.927	0.211
6	91.7	3.24	0.927	0.211
7	92.8	3.27	0.938	0.214
8	100.9	3.56	1.020	0.232
9	96.4	3.40	0.975	0.222
10	96.2	3.39	0.973	0.221
Avg. =	94.8	3.35	0.959	0.218
Sample Dimensions				
Length (in.)= 3.91				
Width (in.)= 3.92				
Thickness (in.)= 0.006				
Area (in <sup>2</sup> )= 15.327				

KJS ID: MS15014 Customer ID: Orrex 86% Ferrite Std Pellets Lot 060301-1 Pallet 219				
Peak Force Measurements				
Test	(g)	(oz.)	(g/cm <sup>2</sup> )	(oz/in <sup>2</sup> )
1	217.4	7.67	2.203	0.501
2	219.9	7.76	2.228	0.507
3	214.8	7.58	2.177	0.495
4	219.3	7.74	2.222	0.506
5	221.4	7.81	2.244	0.511
6	214.2	7.56	2.171	0.494
7	217.1	7.66	2.200	0.501
8	216.8	7.65	2.197	0.500
9	216.2	7.63	2.191	0.499
10	223	7.87	2.260	0.514
Avg. =	218.0	7.69	2.209	0.503
Sample Dimensions				
Length (in.)= 3.901				
Width (in.)= 3.921				
Thickness (in.)= 0.006				
Area (in <sup>2</sup> )= 15.296				

**This Page is Inserted by IFW Indexing and Scanning  
Operations and is not part of the Official Record**

**BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

☒ **BLACK BORDERS**

☐ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**

☐ **FADED TEXT OR DRAWING**

☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**

☐ **SKEWED/SLANTED IMAGES**

☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**

☐ **GRAY SCALE DOCUMENTS**

☐ **LINES OR MARKS ON ORIGINAL DOCUMENT**

☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**

☒ **OTHER:** \_\_\_\_\_

**IMAGES ARE BEST AVAILABLE COPY.**

**As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.**